CLAIMS
Serial No. 09/544,341

This attachment includes a complete listing of all claims ever presented, including the text of all pending and withdrawn claims, in this application.

CLAIMS 1-13 ARE CANCELLED IN THIS AMENDMENT; CLAIMS 14-23 ARE NEWLY SUBMITTED.

1 (Cancelled): A membrane segment for use in surgically treating a segment of damaged cartilage in a mammalian joint, comprising a membrane segment which is porous and hydrophilic and which is permeable to water and to low molecular weight nutrients that are present in mammalian synovial fluid, but which is not permeable to surface-active phospholipids, wherein the membrane segment:

a. is maintained during storage and shipping in a sealed package which ensures sterility of the membrane until use in a surgical procedure;

b. is suited in all respects for implantation into a mammalian joint in a surgical procedure;

c. allows permeation of water and nutrients into cartilage tissue which underlies the membrane segment following surgical implantation; and,

d. has an anchoring surface suited for placement in direct contact with a condyle, and a second opposed surface which will remain exposed as an articulating surface after the membrane segment has been anchored to a bone,

wherein the articulating surface has a pore structure which causes the membrane segment to interact with hyaluronate molecules and surface-active phospholipid molecules in mammalian synovial fluid, in a manner which (i) prevents permeation of the hyaluronate molecules and surface-active phospholipid molecules through the membrane segment; (ii) prevents clogging of pores in the articulating surface by hyaluronate molecules or surface-active phospholipid molecules; and (iii) sustains proper lubrication of the articulating surface of the membrane segment

by synovial fluids, when compressive forces are imposed on the mammalian joint.

2 (Cancelled): The membrane segment of Claim 1, wherein the membrane segment is affixed to a resorbable implantable scaffold which supports chondrocyte cell growth and cartilage secretion when anchored to a bone or cartilage surface.

3 (Cancelled): The membrane segment of Claim 1, wherein the membrane segment is designed to be trimmed to a desired size and shape and then secured directly onto a damaged surface area on a segment of native cartilage.

4 (Cancelled): The membrane segment of Claim 1, wherein the membrane segment comprises collagen fibers.

5 (Cancelled): The membrane segment of Claim 1, wherein the membrane segment comprises a synthetic polymer.

6 (Cancelled): The membrane segment of Claim 1, wherein the membrane segment comprises a copolymeric blend of poly-vinyl alcohol and poly-vinyl pyrrolidone.

7 (Cancelled): The membrane segment of Claim 1, which also contains fibers that extend outwardly from the anchoring surface and which promote secure attachment of the membrane to an underlying surface.

8 (Cancelled): The membrane segment of Claim 1, which is created by steps comprising surface treatment of a thick permeable material in a manner which creates a toughened surface layer.

9 (Cancelled): A method of repairing a cartilage defect in an articulating joint, comprising surgical implantation of a membrane segment of Claim 1 onto a cartilage defect surface area

in the joint.

10 (Cancelled): The method of Claim 9, wherein the membrane segment is seeded with cartilage-secreting cells or stem cells prior to surgical implantation.

11 (Cancelled): The method of Claim 9, wherein the device is seeded with cartilage-secreting cells or stem cells during a surgical implantation procedure.

12 (Cancelled): A membrane segment for use in surgically treating an internal organ in conjunction with a resorbable cell-growing matrix, comprising a membrane segment which is porous and hydrophilic and which is permeable to water and to low molecular weight nutrients dissolved in water, wherein the membrane segment:

a. is maintained during storage and shipping in a sealed package which ensures sterility of the membrane until use in a surgical procedure;

b. is suited in all respects for implantation into a mammalian body in a surgical procedure;

c. has little or no permeability to biological compounds having a molecular weight greater than about 5000 daltons;

d. has an anchoring surface suited for direct contact with a resorbable cell-growing matrix that can be seeded with viable cells, and a second opposed surface which will remain internally exposed, on a surface of an internal organ, after the resorbable cell-growing matrix has been implanted in a body.

13 (Cancelled): A resorbable cell-growing matrix for use in surgically treating an internal organ, wherein at least one surface of the resorbable cell-growing matrix is covered by a membrane segment which is porous and hydrophilic and which is permeable to water and to low molecular weight nutrients dissolved in water.

14 (New): An implant device for surgical insertion into a mammalian articulating joint, comprising a synthetic polymeric hydrogel material with a treated surface layer, wherein the treated surface layer is hydrophilic and permeable to water and interacts with hyaluronate molecules and surface-active phospholipid molecules in synovial fluid in a manner that: (i) prevents permeation of the hyaluronate molecules and surface-active phospholipid molecules through the treated surface layer; (ii) prevents clogging of pores in the treated surface layer by hyaluronate molecules or surface-active phospholipid molecules; and (iii) sustains proper lubrication of the treated surface layer of the membrane segment by synovial fluids, when compressive forces are imposed on the mammalian joint.

15 (New): The implant device of Claim 14, wherein the treated surface layer is created by surface treatment of a synthetic polymeric hydrogel material.

16 (New): The implant device of Claim 15, wherein the surface treatment of the synthetic polymeric hydrogel material utilizes chemical treatment of a synthetic polymeric hydrogel material.

17 (New): The implant device of Claim 14, wherein the surface treatment of the synthetic polymeric hydrogel material utilizes temperature treatment of a synthetic polymeric hydrogel material.

18 (New): The implant device of Claim 14, wherein the surface treatment of the synthetic polymeric hydrogel material utilizes radiation treatment of a synthetic polymeric hydrogel material.

19 (New): A method of repairing a cartilage defect in an articulating joint, comprising surgical implantation of an implant device comprising a synthetic polymeric hydrogel material

with a treated surface layer, wherein the treated surface layer is hydrophilic and permeable to water and interacts with hyaluronate molecules and surface-active phospholipid molecules in synovial fluid in a manner that: (i) prevents permeation of the hyaluronate molecules and surface-active phospholipid molecules through the treated surface layer; (ii) prevents clogging of pores in the treated surface layer by hyaluronate molecules or surface-active phospholipid molecules; and (iii) sustains proper lubrication of the treated surface layer of the membrane segment by synovial fluids, when compressive forces are imposed on the mammalian joint.

20 (New): The method of Claim 19, wherein the treated surface layer is created by surface treatment of a synthetic polymeric hydrogel material.

21 (New): The method of Claim 20, wherein the surface treatment of the synthetic polymeric hydrogel material utilizes chemical treatment of a synthetic polymeric hydrogel material.

22 (New): The method of Claim 20, wherein the surface treatment of the synthetic polymeric hydrogel material utilizes temperature treatment of a synthetic polymeric hydrogel material.

23 (New): The method of Claim 20, wherein the surface treatment of the synthetic polymeric hydrogel material utilizes radiation treatment of a synthetic polymeric hydrogel material.